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U.S. Nuclear Regulatory Commission
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Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of ITAAC 2.5.02.08b.ii [Index Number 543]

Ladies and Gentlemen:

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.5.02.08b.ii [Index Number 543], for verifying the Protection and Safety Monitoring System (PMS) provides for the transfer of controls from the Main Control Room (MCR) to the Remote Shutdown Workstation (RSW) and alarm actuation. The closure process for this ITAAC is based on the guidance described in NEI-08-01, "Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52", which is endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,



Jamie M. Coleman
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4 ITAAC
Completion of ITAAC 2.5.02.08b.ii [Index Number 543]

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cc: Regional Administrator, Region II
 Director, Office of Nuclear Reactor Regulation (NRR)
 Director, Vogtle Project Office NRR
 Senior Resident Inspector – Vogtle 3 & 4

**Southern Nuclear Operating Company
ND-23-0378
Enclosure**

**Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.5.02.08b.ii [Index Number 543]**

ITAAC Statement

Design Commitment

8.b) The PMS provides for the transfer of control capability from the MCR to the RSW using multiple transfer switches. Each individual transfer switch is associated with only a single safety-related group or with nonsafety-related control capability.

Inspections/Tests/Analyses

ii) An operational test of the as-built system will be performed to demonstrate the transfer of control capability from the MCR to the RSW.

Acceptance Criteria

ii) Actuation of each transfer switch results in an alarm in the MCR and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

ITAAC Determination Basis

Multiple ITAAC are performed to ensure that the Protection and Safety Monitoring System (PMS) provides for the transfer of control capability from the Main Control Room (MCR) to the Remote Shutdown Workstation (RSW) using multiple transfer switches. Each individual transfer switch is associated with only a single safety-related group or with non-safety-related control capability. The subject ITAAC required that an operational test of the as-built system be performed to demonstrate the transfer of control capability from the MCR to the RSW.

This ITAAC was performed to verify, by testing, that activation of each PMS transfer switch resulted in an alarm in the MCR and RSW. This ITAAC also verified the activation of the operator control capability from the RSW and the deactivation of the operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

ITAAC 2.5.02.08b.ii was completed as a combination of:

- Factory Acceptance Test – Functional testing of the transfer of controls from the MCR to the RSW including operator control capability from the RSW and deactivation of control from the MCR
- Component Test – Testing of switches in the MCR, RSW, and MCR/RSW Transfer Panel to verify proper wiring and correct digital input is received
- Site software installation and regression test – Hardware and software integration verification and testing of post system delivery changes

The Factory Acceptance Testing (FAT) followed the guidance of NEI 08-01 Section 9.4 (Reference 12) for the as-built tests to be performed at other than the final installed location. The FAT was performed in accordance with the Software Program Manual for Common Q Systems WCAP-16096 (Reference 1), AP1000 Protection and Safety Monitoring System Test Plan (Reference 2), AP1000 Protection and Safety Monitoring System Qualified Data Processing System Channel Integration Test Procedure (References 4 and 5), and applicable Codes and Standards described in Vogtle 3 and 4 UFSAR Chapter 7 (Reference 8).

The FAT included testing of PMS inputs and outputs, logic, and functionality. During this test, the initial conditions for the test scenarios were established and process parameters were simulated to get the expected outputs.

The test initially confirmed that an alarm signal was generated when process parameters were simulated for each transfer switch placed in the Remote Shutdown Room (RSR) ENABLE position. The test procedure used for this testing was PMS Miscellaneous Test Procedure SV4-PMS-T1P-034 (Reference 3). The results of the testing are documented in the FAT Test Report, which is summarized in Reference 14.

The test continued with all transfer switches simulated in the RSR ENABLED position. During this portion of the test, the process parameters were simulated to confirm the operator control capability was transferred from the MCR to the RSW and all MCR operator control capability was deactivated. The multiple test procedures that were used for this testing were PMS Channel Integration Test Procedures SV4-PMS-T1P-007 (Reference 4), SV4-PMS-T1P-008 (Reference 5), and APP-PMS-T1P-009 (Reference 6). The results of the testing are documented in FAT Test Reports, which are summarized in Reference 14.

Site testing of each switch was performed to verify the switch was properly wired and the correct digital input was received. This test placed each switch in the MCR, RSW, and MCR/RSW Transfer Panel in all switch positions and verified proper indicating lights were received in computer cabinets. Unit 4 component testing, as described in Reference 16, documented completion of the switch position testing portion of this ITAAC.

Additional hardware and software installation and associated inspections and testing were performed on-site to verify that the cabinets were intact and functional in accordance with Field Change Notifications (FCNs) AP1000 Vogtle Unit 4 PMS Software Installation - Software Release 9.0.0.1 (Reference 9) and PMS Software Installation – Software Release 9.0.0.4 (Reference 10). These FCNs were implemented by work orders listed in ITAAC Technical Report SV4-PMS-Cabinet Software Loading-001 (Reference 15), and B-GEN-ITPCI-001 (Reference 7). SV4-PMS Cabinet Software Loading-001 (Reference 15) summarizes the software loading. SV4-PMS Cabinet Diagnostic Testing -001 (Reference 13) documents the performance of diagnostic testing, using individual WOs for each cabinet, and verified the diagnostics were satisfactory for each cabinet. References 13 and 15 included steps that confirm and document successful software load and further confirm the physical properties of the as-built PMS. A regression analysis (i.e., change evaluation) was performed for software changes (Reference 11) to determine if additional testing was needed for the as-built system.

The completed Unit 4 FAT, component testing, software loading and PMS cabinet energization and checks, and regression test results confirmed actuation of each transfer switch results in an alarm in the MCR and RSW, the activation of operator control capability from the RSW, and the deactivation of operator control capability from the MCR for the associated safety-related division and nonsafety-related control capability.

References 1 through 16 are available for NRC inspection as part of the ITAAC 2.5.02.08b.ii Unit 4 Completion Package (Reference 17).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all findings pertaining to the subject ITAAC and associated corrective actions. This review found there are no relevant ITAAC findings associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.5.02.08b.ii (Reference 17) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.5.02.08b.ii was performed for VEGP Unit 4 and that the prescribed acceptance criteria were met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. WCAP-16096 "Software Program Manual for Common Q Systems" Revision 4A
2. APP-PMS-T5-001 "AP1000 Protection and Safety Monitoring System Test Plan"
3. SV4-PMS-T1P-034, "AP1000 Protection and Safety Monitoring System Maintenance and Test Panel Miscellaneous Test Procedure"
4. SV4-PMS-T1P-007, "AP1000 Protection and Safety Monitoring System Reactor Trip Channel Integration Test Procedure"
5. SV4-PMS-T1P-008 "AP1000 Protection and Safety Monitoring System System-Level Engineered Safety Features Channel Integration Test Procedure"
6. APP-PMS-T1P-009, "AP1000 Protection and Safety Monitoring Integrated Logic Processor Component Logic Channel Integration Test Procedure"
7. B-GEN-ITPCI-001, Rev 4, "PMS CABINETS"
8. Vogtle Electric Generating Plant (VEGP) Units 3 and 4 Updated Final Safety Analysis Report (UFSAR) Rev 11.2
9. SV4-GW-GCW-740, "AP1000 Vogtle 4 PMS Software Installation - Software Release 9.0.0.1"
10. SV4-GW-GCW-848, "AP1000 Vogtle 4 PMS Software Installation - Software Release 9.0.0.4"
11. SV4-PMS-T2R-050, Rev 1, "Vogtle AP1000 Protection and Safety Monitoring System Fuel Load Regression Test Report"
12. NEI 08-01, Rev 5- Corrected, "Industry Guideline for the ITAAC Closure Process Under 10 CFR Part 52"
13. SV4-PMS Cabinet Diagnostic Testing-001, Rev 0, "Unit 4 PMS Cabinet Diagnostic Testing for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557]"
14. 2.5.02.08b.ii-U0-PRF-Rev0, "ITAAC 543 FAT PCD"
15. SV4-PMS Cabinet Software Loading-001, Rev. 0, "Unit 4 Software Loading for PMS Cabinets for Multiple ITAACs: ITAAC 2.1.02.11a.ii [NRC Index No. 47], ITAAC 2.5.02.06a.ii [NRC Index No. 530], ITAAC 2.5.02.08a.ii [NRC Index No. 540], ITAAC 2.5.02.08b.ii [NRC

Index No. 543], ITAAC 2.5.02.09d [NRC Index No. 548], ITAAC 2.5.04.02.i [NRC Index No. 557]"

16. SV4-PMS-ITR-800543, "Unit 4 PMS Transfer of Control Capability from the MCR to the RSW: ITAAC 2.5.02.08b.ii NRC Index Number: 543"
17. ITAAC Completion Package for ITAAC 2.5.02.08b.ii